Operation, Maintenance & Monitoring Plan

Novelis Corporation – Berea, KY
February 18, 2008

1.0 Scope: This document outlines the steps Novelis Corporation – Berea (Novelis) will take to comply with the requirements of the Secondary Aluminum MACT standard concerning the written Operation, Maintenance and Monitoring (OM&M) plan.

2.0 Responsibility: It is the responsibility of operations and maintenance to follow the procedures and work practices that are required by the MACT requirements.

3. Definitions:

MACT: Maximum Achievable Control Technology

SAPU: Secondary Aluminum Processing Unit: equipment that is grouped together to form one emission system. All group 1 furnaces and flux boxes at Novelis (sidewell furnaces, melters, holding furnaces, & ACD)

Group 1 Furnace: A furnace that either charges dirty scrap and/or uses reactive flux (sidewell furnaces/melters & holding furnaces)

Group 2 Furnace: A furnace that doesn't charge dirty scrap or use reactive flux (melters 4 – only during clean charge)

Affected Sources: Aluminum Scrap Shredder (2), Decoater (Decoating Kiln) (2), Melters (4), Sidewell Furnaces (4), Holding Furnaces (2), & ACD (flux box) (1))

4.0 Procedure:

Novelis' furnace classification for the secondary MACT standard are as follows:

Group 1 furnace clean charge, limited reactive fluxing with controls – Holding Furnaces

Group 1 furnace dirty charge, limited reactive fluxing with controls - Sidewell Furnaces/Melters

A. Work Practices, Pollution Prevention Practices, or Other Measure

Aluminum Scrap Shredders

The facility operates two scrap shredders. Emissions from each shredder are controlled by a baghouse with a common stack.

1. The shredders will exhaust through the shredder (cold) baghouses.
2. The weighbelt scales are used to measure throughput for the shredders.
3. Scrap material will not be fed through the shredder unless the associated baghouse is operational.

Decoaters (Decoating Kilns)

The plant has two decoaters and a baghouse for each. Lime slurry is injected into the air stream to neutralize HCl emissions. The amount of lime slurry injected will be determined during the compliance test. The lime slurry is checked daily to ensure the proper lime concentration is maintained as established during the compliance test. A flow meter is installed that monitors flow through the system. An alarm will trigger if no lime slurry flow is measured.

1. The decoaters will exhaust through the Acid Gas Removal System (AGRS) lime injected baghouse.
2. The incinerator (afterburner) temperature will remain at a minimum of 760 degrees C. and at or above the set point established during performance testing.
3. The decoater will be subject to the alternative limits since the incinerator residence time is greater than 1 second.
4. The weighbelt scales will be used to measure throughput for the decoaters.
5. The lime injected baghouse inlet temperature will not exceed 164 degrees C (Compliance test at 150 degrees C).
6. Lime slurry will be free flowing.

Flux Box (ACD)

The ACD is an in-line flux box used in the casting process. The ACD exhaust to the holding furnace, which exhaust to the lime injected AGRS baghouse. Lime slurry is injected into the air stream to neutralize HCl emissions. The amount of lime slurry injected is determined during the compliance test. The lime slurry will be checked daily to ensure the proper lime concentration is maintained as established during the compliance test. A flow meter is installed that monitors flow through the system. An alarm will trigger if no lime slurry flow is measured.

1. Only clean charge material will be added to the flux box.
2. Chlorine use will not exceed the rate of 6.0 liters/minute as described in the MACT Stack Test Exemption Request – In Line Fluxer – ACD, submitted with the stack test protocol in May 2006. Usage will be measured by the flow controller at the flux box. The plant's electronic monitoring system (PI) automatically calculates the chlorine usage per ton of aluminum throughput
3. The production rate is used to measure throughput from the flux box. The calculation 'length*width*depth*0.0975* # of ingots' is used to determine throughput of the Flux Box.
4. The lime injected baghouse inlet temperature will not exceed 164 degrees C (Compliance test at 150 degrees C).
5. Lime slurry is free flowing

Holding Furnaces

The facility operates two holding furnaces. Molten aluminum is transferred from the melt furnaces to the holding furnaces. A salt flux injection and dross skimming is completed in the holding furnaces before the molten aluminum is poured out of the furnaces during the casting process.

The holding furnaces are controlled by lime injected baghouses. Lime slurry is injected into the air stream to neutralize HCl emissions. The amount of lime slurry injected will be determined during the compliance test. The lime slurry will be checked daily to ensure the proper lime concentration is maintained as established during the compliance test. A flow meter is installed that monitors flow through the system. An alarm will trigger if no lime slurry flow is measured.

1. Only clean charge material will be added to the holding furnaces
2. The production rate, divided by two holding furnaces, will be used to determine throughput for each holding furnace.
3. Salt will be added by using Rotary Flux Injection (RFI) that places the salt under the surface of the molten metal bath. A maximum of 50 lbs is used per holder per cast.
4. Each holding furnace will exhaust through a lime-injected baghouse during salt flux injection.
5. The lime injected baghouse inlet temperature will not exceed 164 degrees C (performance test at 150 degrees C)
6. Lime slurry is free flowing

SALT USAGE CALCULATION - Chlorine Concentration

CALCULATION For AMLOX 72F Salt at each Holder

$MgCl_2$ is 61.1%, KCl is 38.9 %
Chlorine is 74.4% of $MgCl_2$ and 47.5% of KCl
The chlorine content of 50 lbs of salt is:
(.389* .475)+(.611*.744) = 0.639359
0.639359 * (50 lbs salt per test run / 3 hours each run) / 21.15 ton /hr = 0.50 lbs / ton

The electronic PI system automatically calculates, on a daily basis, the chlorine usage per ton of aluminum throughput. Chlorine per ton of aluminum production will be determined from the compliance test. The daily chlorine usage in pounds per ton of aluminum processed can be found in our electronic monitoring system.

Sidewell Furnaces

1. Operate the Hot Baghouse when the sidewell is being charged with "dirty" scrap and / or salt is being added.
2. Maintain the molten metal level above the archway between the sidewell and the main hearth of the furnace when salt is added
3. Salt additions will not exceed 34.19 lbs chlorine/ton aluminum per line #1 and 25.25 lbs chlorine/ton aluminum per line #2. Rate derived from compliance test.
4. The production rate by as-cast metal will be allocated by net inches dropped at transfer by each sidewell furnace. In the event the net inches can not be determined for one or more furnaces, the production rate by as-cast metal will be allocated to each, based on dividing by the number of operating sidewell furnaces.

The production from the sidewell furnace must be recorded. The production for the sidewell furnaces is the tabulation of the pounds of aluminum production.

The amount of salt used must be recorded. The salt is weighed by using load cells that weigh the salt added to the sidewell.

The molten metal level will remain above the archway between the sidewell and the main hearth at all times, unless the furnace is drained for cleaning or maintenance.

Salt usage calculation
The system will automatically calculate the chlorine usage per ton of aluminum produced with the upper limit based on the compliance test. See examples below to determine chlorine available in salt.

CALCULATION For Sidewell Salt Additions

Products for sidewell:

a) AMLOX 72 / 71-30-003 (Supersalt)

Assume content of salt at 40% KCl, and 60% MgCl

Chlorine is 74.4% of $MgCl_2$ and Cl is 47.5% of KCl

(.40*.475)+(.60*.744)=0.6364 lbs. Cl/lbs. salt

0.6364 lbs Cl / lbs of salt * lbs of salt / tons of aluminum production = lbs of Cl per ton of aluminum produced

Chlorine from supersalt (Line #1):
400 lbs per cycle of salt during each stack test / 3 hrs per testing X 0.6364 lbs Cl = 84.85 lbs of Cl

84.85 lbs Cl / 27.42 tons per hr = 3.09 lbs Cl / ton cast

Chlorine from supersalt (Line #2):
400 lbs per cycle of salt during each stack test / 3 hrs of testing X 0.6364 lbs Cl = 84.85 lbs of Cl

84.85lbs Cl / 31.98 tons per hr = 2.65 lbs Cl / ton of cast

b) A-103-1 / 47.5, 47.5, 5 PAF (Melter Sidewell Salt)

Assume content of salt at 47.5 % NaCl, 47.5 %KCl, and 5% Potassium Aluminum Fluoride by weight. There is no chlorine in potassium aluminum fluoride, so chlorine is 35.453/58.442 or 60.66% of NaCl and 35.453/74.555 or 47.5% of KCl

(.475 * .475) + (.6066 * .475) = 0.51376 Cl/lbs. salt

0.51376 Cl / lbs of salt * lbs of salt / tons of aluminum production = lbs of Cl per ton of aluminum produced

Chlorine from sidewell salt (Line #1):

- 4987 lbs of salt (average) / per each 3 hour run during stack test = 1662.33
- 1662.33 lbs of salt / hr * 0.513 lbs Cl / lb of salt = 852.78 lbs
- 852.78 lbs Cl per hour into sidewells (line #1)

852.78 lbs Cl / 27.42 tons per hr = 31.10 lbs Cl / ton of cast

Total Chlorine = 3.09 lbs Cl + 31.10 lbs Cl = **34.19 lbs** Cl / ton cast (line#1)

Chlorine from sidewell salt (Line #2):

- 4227 lbs of salt (average) / per each 3 hour run during stack test = 1409.00

- 1409.00 lbs of salt / hr * 0.513 lbs Cl / lb of salt = 722.82 lbs
- 722.82 lbs Cl per hour into sidewells (line #2)

722.82 lbs Cl / 31.98 tons per hr = 22.60 lbs Cl / ton cast

Total Chlorine = 2.65 lbs Cl + 22.60 lbs Cl = **25.25 lbs** Cl / ton cast (line#2)

The lbs of chlorine per ton of aluminum will be calculated with a maximum of 34.19 lbs chlorine/ton aluminum throughput for the salt currently used on line #1 and 25.25 lbs chlorine/tom aluminum throughput for the salt currently used on line #2. This rate was used during the performance test. The salt use in pounds per ton of aluminum produced can be found in PI. If the salt composition is changed, then the amount of salt added to the sidewell will be recalculated.

Secondary Aluminum Processing Units (SAPU)

Novelis' SAPU consists of the following equipment

Equipment	Control device
1. Sidewell/Melter Furnace (4)	Baghouse
2. Holding Furnace (2)	Lime injection baghouse
3. Flux box (1)	Lime injection baghouse

The emission factor for each piece of equipment in the SAPU will be determined by the compliance tests. The generic calculation for the SAPU compliance will be as follows: the summation of the emission limits * source production divided by total production = limit for MACT. You will compare the summation of the compliance test emission limits * source production divided by total production to see if the limit has been exceeded. If the compliance tests results determine that each individual piece of equipment is in compliance with the MACT standard, then no SAPU calculation will be needed.

B. Labeling

The Secondary Aluminum MACT 40 CFR 63 Subpart RRR requires emission unit labeling to ensure the requirements of the MACT for each emission unit affected are available for inspection and review at the machine center. To comply with this requirement, the facility has placed labels next to each piece of equipment with the required information. This information will be stored in our procedures database and can be retrieved at any computer in the plant.

C. Recordkeeping Requirements

General

1. All records concerning compliance with the MACT standards must be maintained for 5 years. Records are maintained either in electronic or hardcopy form.
2. Calibration records for monitoring/measuring devices are considered MACT compliance records
3. SAPU three-day rolling avg. for HCL, particulate and dioxin/furans must be calculated and the record maintained if required. If the compliance test determines that each individual piece of equipment is in compliance with the MACT standard, then no calculation will be required.

Aluminum Scrap Shredders

1. Maintain records of throughput
2. Maintain records of bagbreak alarm (true alarms).

Decoaters

1. Maintain records of throughput
2. Maintain records of afterburner temperature
3. Maintain records of free flowing lime at the baghouse.
4. Maintain records of bagbreak alarms (true alarms)
5. Maintain records of baghouse inlet temperature.

Sidewell Furnaces

1. Maintain records of salt flux use
2. Maintain records of throughput
3. Maintain records of molten metal level above archway.

Flux Box (ACD)

1. Maintain records of chlorine use
2. Maintain records of throughput
3. Maintain records of free flowing lime at the baghouse
4. Maintain records of baghouse lime setting
5. Maintain records of bagbreak alarms (true alarms).
6. Maintain records of baghouse inlet temperature

Holding Furnaces

1. Maintain records of salt flux use
2. Maintain records of throughput
3. Maintain records of free flowing lime at the baghouse
4. Maintain records of the baghouse lime setting
5. Maintain records of bagbreak alarm (true alarms).
6. Maintain records of baghouse inlet temperature

D. Monitoring Requirements

Aluminum Scrap Shredders

Parameters to Measure	Monitoring Frequency	How Monitored	Range	Device Calibrated	Calibration Frequency
Scrap Throughput	Continuous	Weighbelt scales	45000 lbs/hr	Weighbelt scales	Semiannual
Bag breaks	Continuous	Bag break detectors	40% for 5 mins	Bagbreak	Annual

Decoaters

Parameters to Measure	Monitoring Frequency	How Monitored	Range	Device Calibrated	Calibration Frequency
Scrap Throughput	Continuous	Weighbelt Scales	45000 lbs/hr max 43500 lbs./hr established during latest compliance testing	Weighbelt Scales	Semiannual
Afterburner Temperature	Continuous	Thermocouple	810 Degrees C min	Temperature Transducer	Semiannual
Baghouse Lime Free Flowing	Continuous	Mag Flow Meter	Lime Must Be Free Flowing	Mag Flow Meter	Annual
Baghouse Lime Concentration Setting	Daily	Solids Settle Test	1.75%	NA	NA
Bag Breaks	Continuous	Bag Break Detectors	40% for 5 min	Bagbreak	Annual
Inlet Baghouse Temperature	Continuous	Thermocouple	164 Degrees C Max	Temperature Transducer	Annual

SAPU

Parameters to Measure	Monitoring Frequency	How Monitored	Range	Device Calibrated	Calibration Frequency
3 Day Rolling Average On Emissions	Daily	By Calculation, If Required	Calculated From Compliance Test	NA	NA

Sidewell Furnace

Parameters to Measure	Monitoring Frequency	How Monitored	Range	Device Calibrated	Calibration Frequency
Salt Flux Additions	Every Cycle	Salt Scales	34.19 lbs chlorine / ton or 5,387 lbs per cycle of salt flux to Line #1 25.25 lbs chlorine / ton or 4,627 lbs per cycle of salt flux to Line #2	Load Cells	Annual
Bag Breaks	Continuous	Bag break detectors	40% for 5 min	Bagbreak	Annual
Molten Metal Above Archway	Every Cycle	Visual or Metal Level Measurement	Molten Metal Above Archway	NA	NA

Holding Furnace

Parameters to Measure	Monitoring Frequency	How Monitored	Range	Device Calibrated	Calibration Frequency
Salt Flux Additions	Every Cycle	lbs added per cast	0.50 lbs chlorine / ton or 50 lbs of salt flux	NA	NA
Baghouse Lime Slurry Free Flowing	Continuous	Flow Meter	Lime Slurry Must Be Free Flowing	Flow Meter	Annual
Baghouse Lime Setting	Monthly	Solids Settle Test	1.75%	NA	NA
Bag Breaks	Continuous	Bag break detectors	40% for 5 min	Bagbreak	Annual
Inlet Temperature	Continuous	Thermocouple	164 Degrees C Max	Temperature Transducer	Annual

Flux Box

Parameters to Measure	Monitoring Frequency	How Monitored	Range	Device Calibrated	Calibration Frequency
Chlorine	Daily	Mass Flow Controller	6.0 l/min	Mass Flow Controller	Annual
Baghouse Lime Slurry Free Flowing	Continuous	Flow Meter	Lime Slurry Must Be Free Flowing	Flow Meter	Annual
Baghouse Lime Setting	Monthly	Solids Settle Test	1.75%	NA	NA
Bag Breaks	Continuous	Bag break detectors	40% for 5 min	Bagbreak	Annual
Inlet Temperature	Continuous	Thermocouple	164 Degrees C Max	Temperature Transducer	Annual

E. Monitoring Methods

Salt Flux Additions – Sidewells

The facility has four sidewell furnaces (1A, 1B, 2A & 2B) that receive aluminum scrap from its decoating furnaces. In addition, these sidewell furnaces are directly charged with other aluminum scrap inputs, as well as, solid reactive fluxing.

The facility is designed as such that there is two bulk salt hoppers, each feeding salt flux to two sidewells through an auger system. Sidewell furnaces 1A & 1B (line #1) are fed from the same bulk salt flux hopper, and sidewell furnaces 2A & 2B (line #2) are fed from the same bulk salt flux hopper. Salt flux is monitored for each sidewell by multiplying the percent time the auger is "on" to the total amount of salt flux used for the two sidewells. The bulk hoppers are weighed by the system every 15 minutes. Experience has shown that the salt augers for each pair of sidewells that receive salt from a common bulk hopper operate at the same speed and deliver the same amount of salt for every minute that that auger is operating. Within each 15 minute period this production information system (PI) monitors the amount of time that each auger operated. Based upon the auger time and the difference between the beginning weight and ending weight, the facility is able to calculate the net salt use every 15 minutes for each of the four sidewells.

For example, assume the PI system says line #1 sidewells (1A & 1B) used 100 lbs of salt during a 15 minute period, and 1A auger was "on" 60% of the time and 1B auger was "on" 40% of the time. Therefore, 1A sidewell used 60 lbs of salt flux (60% X 100 lbs = 60 lbs).

Production Rate Calculation

The facility calculates the cast aluminum production rate by using the following formula: *'length of ingot * width of ingot * depth of ingot * 0.0975 * number of ingots = production weight'* per cast cycle which varies depending length of ingot cast.

The facility has "recipes" stored electronically in its casting system to identify each size of ingot ordered by its customer. These recipes define the size and dimensions of the ingots to be cast (i.e. width & depth). The facility uses a *Temposonic* measuring device to measure length of ingots during a cast. At the end of the cast, the amount of aluminum cast is calculated based on the above formula.

The weight of aluminum cast is stored in the facility's electronic PI system.

Sidewell Furnace Throughput Rates

The facility has four sidewell furnaces that feed the facility's two holding furnaces. The four sidewell furnaces are identical in function and size. The furnace inputs include used beverage cans and class scrap from the associated decoating furnaces; and hard charge material, alloys, reactive salt flux and run around scrap. Cast aluminum production rate is allocated to each operating furnace by net metal drop during transfer.

Holding Furnaces Throughput Rates

The facility has two holding furnaces that receive molten aluminum from the plant's four sidewell furnaces. These holding furnaces act in a batch mode rather than a continuous mode. The two holding furnaces' molten aluminum is processed with a solid reactive salt flux before the metal is poured into solid aluminum ingots. To determine the holding furnaces throughput rates, the plant is using the calculated cast aluminum production rate and dividing by two, since the two holding furnaces are identical in function, size and salt use.

Lime Concentration

The facility has two Acid Gas Removal Systems (AGRS), one for each line. The emission sources associated with this system is the decoaters, holding furnaces and ACD (flux box). As part of the AGRS system, lime slurry is injected into the air stream to neutralize hydrogen chloride (HCL) from the decoating and fluxing processes.
A lime slurry batch is made by mixing hydrated lime and water. The lime content is measured by a gravimetric analysis during each shift to ensure an adequate amount of lime remains in the slurry. The current percent of lime concentration is 1.75 based on the latest performance tests. The gravimetric analysis is performed by collecting a slurry sample and letting it settle for one hour in a flask. After settling, the amount of solids is measured using the facility's lime concentration chart that correlates the amount of solids in flask with solids percent (i.e 1.75% solids equals 3.0 ML).

Free Flowing Lime

The facility has two Acid Gas Removal Systems (AGRS), one for each line. The emission units associated with these systems are the decoaters, holding furnaces and one ACD (flux box). As part of the AGRS system, lime slurry is injected into the air stream to neutralize hydrogen chloride (HCL) generated from the decoating and fluxing processes.
The lime slurry flow rate is continuously monitored through the facility's electronic PI and APM (Automated Process Monitoring) systems. This flow rate is established during the performance test and is linear based on weighbelt throughput rates. The lime slurry flow meter used to measure lime slurry flow is maintained according to 40 CFR 63 Subpart RRR.

F. Monitoring Devices

Weighbelt Scales

The weighbelt scales are used to monitor scrap throughput rates for the shredders and decoaters. The weighbelt scales are located after the shredders and before the decoaters.

Manufacturer: Thermo Ramsey
Model: Series 20 Belt Scale System
Accuracy: +/- 0.50%

Salt Flux Scales – Sidewells
The salt flux scales are located below the salt feeders between the sidewells on line #1 and line #2.

Manufacturer – Rice Lake Weighing Systems
Model – RL 35023-N5-2K
Accuracy - 0.03%

Temposonic – Ingot Length
The Tempasonic sensor is located in the casting pit and measures ingot length during the casting process.

Manufacturer – MTS Sensors
Model – G Series
Accuracy - +/- 0.02%

Lime Slurry Flow Meter
The lime slurry flow rate is controlled by a valve using a Rosemount magnetic flow meter. Lime slurry for each Acid Gas Removal System (AGRS) is measured separately. Each valve controls the amount of lime slurry injected into the air stream for the neutralization of hydrogen chloride.

Manufacturer: Rosemount (Emerson Process Management)
Model: 8712D
Accuracy: +/- 0.50%

and / or

Manufacturer: Rosemount (Brooks)
Model: Brooks – UMB Water-Mag / 3570
Accuracy: +/-1%

Incinerator Temperature
The incinerator temperature transmitter/thermocouple measures the temperature of the decoater incinerator (afterburner). The facility has a transmitter for each of its two incinerators.

Manufacturer – Rosemount
Model – 444
Thermocouple – Type K
Span – 0° - 1410° C

AGRS Baghouse Inlet Temperature

The baghouse inlet temperature transmitter/thermocouple is located after the quench reactor and before the baghouse. It measures the temperature of the air stream prior to the air stream entering the baghouse.

Manufacturer – Thermo Electric
Model – E2657-K
Thermocouple – Type K
Span – 0° – 600° C

Chlorine Mass Flow Meter

The chlorine mass flow meter is a part of the ACD (flux box) process in the casting area. The flow meter controls the amount of chlorine injected to the molten aluminum during the casting process.

Manufacturer: Sierra Instruments
Model: 840
Accuracy: 1.5%

Radar Level Sensor

The radar level sensor is part of the sidewell furnace metal level measurement system. The radar sensor measures the level of molten metal in the main hearth of each sidewell furnace.

Manufacturer: Omhart/Vega
Model: Vegapuls 66
Accuracy: +/- 0.03%

G. Maintenance

General Procedure for PM Development

Maintenance personnel are responsible for completing the MACT PM's in their assigned areas. All completed MACT calibration PM's are considered records and are to be treated as such. Calibration of MACT monitoring devices will be per the manufacturer's recommendation. If there is no manufacturer's recommendation, then the calibrations will be completed semi-annually. Calibration records will be maintained for five years.

Procedure:

PM's are scheduled and maintained in MAXIMO as they become due. PM's are generated from reviewing the equipment requirements and the manufacturer's recommendations.

When any PM is completed the following steps must be completed.

1. Each PM that is due generates a work order for completion.
2. Each work order is verified as complete by the responsible maintenance personnel after completing the work order.
3. All information pertaining to each PM is noted in MAXIMO on the work order.

After work is completed, PM is signed and completed in MAXIMO. The PM is then filed. These PM'S are filed by equipment number.

Calibration of measuring devices required for MACT will be kept in MAXIMO or the EtQ Calibration database, whichever is appropriate.

Equipment	Location / PM	Activity	Frequency
Shredder (Cold) Baghouse	841BL01 (213-AS) 842BL01 (246-AK)	Fan Inspection	Semi-Annual
	841DT01 (681) 842DT01 (682)	Lube Damper Bearings	Quarterly
	841BH01 (292-BZ) 842BH01 (293-BW)	Fire Protection	Monthly
	841BL01 (42-BC) 842BL01 (2-BC)	Lube Fan Motor Bearings	Every 2 Months
	841BL01 (12-AL) 842BL01 (80-AK)	Lube Fan Shaft Bearing	Semi-Annual
	841BH01 (57-AS)	Lube Screw Conveyor Motor & Bearing	Monthly
	841DM01 (7771) 842DM01 (7772)	Calibrate Bagbreak	Annual

Decoater/Afterburner	431IN01 (7764) 432IN01 (7763)	Afterburner Inspections	Quarterly
AGRS Baghouse	861DT01 (685) 862DT01 (686)	Lube Damper Bearings	Annual
	861RV04 (530-BZ) 861CN02 (505-CA) 861CN03 (506-CA)	Check Rotary Airlock, Screw Conveyor	Monthly
	861BH01 (738) 862BH01 (738)	Calibrate Temperature & Pressure Sensors, Blacklight Test, Seals & Couplings	Quarterly
	861DM01 (7775) 862DM01 (7776)	Bagbreak Calibration	Annual
	861BH01 (7777) 862BH01 (7778)	Slurry Flow Meter Calibration	Semi-Annual
	861BH01 (008-TQ) 862BH01 (208)	Check Lime Feeder & Silo	Daily
	861BH02 (PM-52X-022-FR 862BH01 (PM-52X-222)	Lime Injector Cleaning	Weekly
Sidewell Melters	521FN10 (680) 522FN50 (695) 523FN10 (696) 524FN50 (697)	Exhaust Hood Inspections	Monthly
	521FN10 (202-BG) 522FN50 (709) 523FN10 (710) 524FN50 (711)	Combustion Cycle System Check	Monthly
	521FN10 (7952) 522FN50 (7953) 523FN10 (7954) 524FN50 (7955)	Level Sensor	Monthly
	521FN10 (805) 522FN50 (806) 523FN10 (807) 524FN50 (808)	Temperature Thermocouple Check	Monthly
Hot Baghouse	851BL01 (214-AJ) 852BL01 (247-AL) 853BL01 (7882)	Fan Inspection	Semi-Annual

	851DT01 (683) 852DT01 (684) 853DT01 (7875)	Lube Damper Bearings	Quarterly
	851BL01 (3-BC) 852BL01 (1-BC) 853BL01 (7881)	Lube Fan Motor Bearings	Every 2 Months
	851BH01 (296-BS) 852BH01 (295-BS) 853BH01 (7865)	Rotary Valves, Fire Protection	Monthly
	851BL01 (46-AL 852BL01 (81-AK) 853BL01 (7884)	Lube Fan Shaft Bearings	Semi-Annual
	851BH01 (58-AT) 852BH01 (90-AT) 853BH01 (7866)	Lube Conveyor Bearings, Drive Motors	Monthly
	851DM01 (7773) 852DM01 (7774)	Calibrate Bagbreak Detectors	Annual
ACD (Flux Box)	620DG15 (7577)	Joint / Pipe Conditions	Quarterly
	620DG15 (7578)	Pressure Regulators	Semi-Annual
	620DG15 (7579)	Change Mass Flow Meter	Annual
	620BL01 (752)	Lube Exhaust Fan Motor	Annual
	620DG15 (7575)	Gas Panel Inspection	Weekly
	620DG15 (7576)	Dust Exhaust System Inspection	Monthly

H. SAPU Calculations

1. A constant will be determined by the compliance test and used as the emission rate for each individual piece of equipment.

2. Our shop floor system maintains the amount of material passing through each emission source.

3. At the end of each day, we will calculate the emission rate for the facility using the throughputs and the emission factor determined during the compliance test and compare it to the standard for that day.

4. The three-day rolling average will be calculated using the throughputs of each emission source associated with the SAPU. No SAPU group calculation will be completed if the results of the compliance tests indicate the emission units are in compliance as separate individuals.

I. Equipment Procedure

1. Baghouse Procedure

SCOPE: The baghouses are pollution control equipment used to control particulate and hydrogen chloride (HCL) emissions to atmosphere. Both operators and maintenance personnel have responsibilities to keep the systems functional.

RESPONSIBILITY:

- The operators are responsible for monitoring the system and addressing issues that are in there area of skill. If issues arise that are beyond operators skill set, they are to notify the maintenance personnel.
- The maintenance personnel are responsible for completing PM's and the operators are responsible for daily checks on the baghouses and responding to alarms.

DEFINITIONS:

- Baghouse: Pollution control device used to capture particulate emissions and if equipped with lime feed, control acid gas emissions.
- PM: Preventative Maintenance: Activities that are completed on a routine basis to ensure a system remains operational and/or accurate.
- Particulate: dust particles emitted from the process.
- HCL: Hydrogen chloride: acid gas that is a bi-product of using chlorine, salt or decoating PVC coated scrap.

PROCEDURE:

During daily rounds, the operations personnel will complete a walkthrough on the baghouse. The walkthrough will include observation of inlet temperature, lime slurry flow, lime hopper check to ensure adequate lime, and any unusual conditions (belts squeaking, pulse stuck etc.).

The monitoring of the baghouse alarms will be completed by the operations personnel. The alarms will annunciate at the Hot Metal control stations and the operators station. The back-up baghouse operators will acknowledge the alarm in the operators' absence.

- The operators will be responsible for the investigation concerning the alarm and complete any repair required. The operators can use the baghouse manuals to trouble shoot the issue if he/she is unfamiliar with the system or can notify the maintenance personnel.

Bag break detectors have been installed to ensure that the baghouse system is not leaking. If we experience any issue that might be related to a bag break or leakage, then an alarm will enunciate on the plant paging system. Corrective action will be initiated on any bag break detector alarm within 1 hour of the alarm. All true alarms will be counted as one-hour minimums. If we take more than one hour to initiate corrective action, the alarm time will be counted as the actual amount of time taken to initiate corrective action. The baghouse system will be operated so that the bag leak detection system alarm does not sound for more than 5% of the operating time during a six-month block period.